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Direct (1948) Department.

Ms SERIES.

G.O. No. 4416

Dated 26-8-48

[Despatch Abstract.]

AGRICULTURE : I.C.A.R : SCHEME FOR TESTS WITH DDT 666 AND ALLIED I SECTICIDEES : CONTINUANCE PROPOSALS : FORWARDED.

GOVERNMENT OF MADRAS
Development Department.

Letter (Ms) No. 4416 Dev. Dated, the 26th August 1948

From

W.R.S. Sattianathan, Esq., I.C.S.,
Secretary to Government.

To

The Secretary to the Indian Council
of Agricultural Research,
NEW DELHI.

Sir,

Sub: AGRICULTURE - Indian Council of Agricultural Research - Scheme for Tests with DDT 666 and allied insecticides - Continuance - Proposals - Forwarded.

Ref: Your letter No.F23(19)/46.A dated the 24th December 1946.

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I am directed to forward herewith proposals for the extension of the Scheme for tests with DDT 666 and allied insecticides for a period of one year from the 15th November 1948 the date on which the existing sanction for the Scheme expires. The extension scheme is estimated to cost Rs. 4,436 and it is proposed to share the expenditure between the Indian Council of Agricultural Research and the Provincial Government on a 50: 50 basis.

2. I am to request that the sanction of the Indian Council of Agricultural Research for the extension proposals may kindly be obtained and communicated to this Government at an early date.

Yours faithfully,

(sd) W.R.S. SATTIANATHAN
Secretary to Government

Copy to the Director of Agriculture, Madras. He is requested to submit the usual printed copies of the Scheme at an early date.

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

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EXTENSION OF THE SCHEME FOR TESTS WITH D.D.T. BENZENE HEXACHLORIDE AND ALLIED INSECTICIDES.

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I. INTRODUCTION.

The Scheme has for its object the trial of DDT and Benzene Hexacholride for the control of crop pests. It was sanctioned by the Indian Council of Agricultural Research in their letter No.F. 23(19)-46.A dated 24-12-46, for a period of two years. This was accepted by the Madras Government, but sanction was accorded for one year only from 15 11-1946 at the first instance as per G.O. (Ms) No. 3656 dated 26-9-1946. The same was extended for another year in G.O. (Ms) No. 4309 dated 4-9-1947 and is expected to terminate by 14-11-1948. It is felt that the results obtained during these two years have to be confirmed by further trials and as such the extension of the scheme for one more year till 14-11-49 may kindly be considered.

II. APPROVED TECHNICAL PROGRAMME (AS APPROVED BY THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH).

(1) The Cholam earhead bug: (Calocoris angustatus): The trials will be conducted in the irrigated cholam crop at Coimbatore and the dry cholam crop at Guntur. The trials will be in randomised plots with replications. Trials will be made with 3,5 and 7% DDT and Gammexane with Nanjanad clay and control. The dusting will be done when the earheads are just forming. The average population of the pest will be taken before and after treatment and the yield in the several plots taken separately at harvest and studied

(2) The Chillies thrips (Scirtothrips dorsalis): These trials will also be done at Coimbatore and Guntur. The trials will be on the same lines as in the case of Galocoris. Tobacco dust will be the standard for comparison. The plots will be randomised and replicated. The treatments will be 3 strengths of DDT, 3 strengths of Gammexane, one tobacco, one Nanjanad clay and one control, making up a total of 9. The incidence will be taken before and after treatment. The yeidd in each plot will be taken separately and the relative value assessed.

(3) The Brinjal lady bird beetle: (Epilachna sp): DDT and Gammexane will be tried both as dust and as spray in water suspension at Coimbatore. The results will be compared with Calcium arsenate 1 in 6. The strength as dust will be 3,5 and 7% as before and the suspension at 0.1% 0.5% and 0.25%. There will be 8 treatments in each case with one common control making up 17 treatments in all. Trials will be in randomised replicated plots. Incidence before and after treatment will be taken and yield of each plot gathered separately for comparison.

(4) The Paddy thrips (Thrips oryzae): 0.25%, 0.05% and 0.1% water suspension of DDT and Gammexane with 1 in 6 solution of tobacco decoction for comparison will be tried in paddy nurseries at Coimbatore in 1/2 cent plots randomised 4 times. Incidence of the pest before and after treatment and the final incidence before transplantation will be taken.

III. WORK DONE SO FAR.

(1) The Cholam Earhead bug - (Calcocoris angustatus): Large scale dusting trials with DDT 2% (DDT 75% of Messrs. Parry and Company, Madras, diluted with Nanjanad clay) and Benzene Hexacholoride 2% (D.025 of the Imperial Chemical Industries (India) Ltd., diluted with Nanjanad clay) were taken up on the irrigated cholam crop at Coimbatore during May 1947. A compact area of Kesari cholam of 45 acres sown by ~~May-1947.--A-seem~~ early March at Peelamedu was dusted with DDT and Benzene Hexacholride during the second week of May, when the earheads were in the milk stages

and the pest was just appearing. A comparison on the population before and after treatment indicated that the pest was checked to some extent in the treated plots and an increased yield of 28% was recorded in both the treatments over the control.

The trials were repeated on the same lines during May 1948 on 30 acres of Kullanari Cholam at Pellamedu and 9 acres of Co.809 at Ondipudur. The results were quite similar. The yield of the plots treated with DDT gave an increase of 23.1 and 6.9% while that of the plots treated with Benzene Hexacholride 54.7 and 50.9% over the control in the two places respectively.

To assess the optimum dose necessary to effect the maximum efficiency, small scale trials at modified strengths 4 and 5% of DDT and Benzene Hexacholride were conducted at Coimbatore during May 1947, and repeated again in 1948. The results showed that though the pest was kept in check and the yield increased to a certain extent in all the treatments, the varaitions between the latter and the controls were not uniformly convincing the probable reasons being that the trials were conducted on 5 cent plots amidst a bluk area and that there was every possibility of the bugs migrating the treated plots from the controls.

Similar trials made at Guntur on dry cholam - vary G.3 (Pacha jonna) did not give ~~conclusive~~ results as the crop itself was poor owing to adverse seasonal factors.

(2) The Chillies thrips:(Scirtothrips dorsalis): Dust of DDT and Benzene Hexacholride at 3,4 and 5% strength was made in 2 cent plots on the dry crops of chillies at Guntur. At Coimbatore a preliminary trial of the insecticides at 1,2,3 and 5% strengths was made. In both the places the results conclusive owing to unfavourable weahter conditions. The trends of the population and yield, however, are in favour of Benzene Hexacholride, the 4% concentrate giving the best results.

(3) The Brinjal lady bird beetle (Epilachna sp.): Dusting of 3,4 and 5% concetrates and spraing at p.20, 0.10 and 0.05% of DDT and Benzene Hexachloride with Calcium aresenate and Nanjanad clay both as dust and spray and control were made for ~~contr~~ the control of brinjal epilachna at Coimbatore. The results show that DDT both as spray and dust was equal in efficient Calcium arsenate.

(4) The Paddy thrips (Thrips oryzae): Sprays of DDT and Benzene Hexacholride at 0.25, 0.10 and 0.05% strengths were tried and the results compared with tobacco decoction in paddy nurseries in August 1947. Both the insecticies at 0.25 and 0.10 strengths proved slightly better than tobacco decoction controlling the pest.

Apart from the pests mentioned in the scheme above, every opportunity was taken to try these chemicals on various crop pests and assess the insecticidal value. A gist of the results is furnished below:

1. The Cotton bollworms (Platyedra and Earias sp.) DDT and Benzene Hexacholride at 2 and 5% concentrations as dust were tried aginat cotton bollworms on Cambodia cotton at Coimbatore in 1946-47 and 1947-48. The results indicated that there is a reduction in the incidence of the pest as well as in the damage to the kapas in the two treatments.

2. The Sugarcane fly (Pyrilla perpusilla) - Benzene Hexachloride D. 025 dust. A seven acre block of Cp.421 was found severely infested with the pest and a dusting with D.o25 gave considerable relief.

3. The Paddy bug (Leptrocorisa acuts) - DDT and Benzene Hexachloride 5% Dusts:* High mortality of the caterpillars was recorded in infested fields dusted with the chemicals. Trenches also were dug and dusted with the chemicals. Migrating caterpillars that dropped into the trenches were found to die by contact.

* The dusts plants were free from the bugs and the % of chaff was less compared to the control.

⊗ 4. The paddy swarming caterpillar:- DDT & Benzene Hexachloride 2% dust.

5.	The lablab aphis bug (Coptosoma sp)	Benzene Hexachloride 5per cent dust.	High mortality.
6.	The Lablab aphis: (Aphis medicagenis)	-do-	-do-
7.	The Brinjal tingid (Urnetius echunus)	-do-	-do-
8.	The grapevine flea bettle (Scelodonta strigicollis)	DDT Benzene Hexachloride dust and spray.	-do-
9.	Termites in grape vine Nursery:	DDT and Benzene Hexachloride dust racked in	Nursery free from attack
10	The Black ant(Camponatus Compressus)	DDT andBHC 2% dust.	Kill ants or drive them away from their holes.
11	The Red tree ant - (Oecophylla Smaragdina)	DDT and BHC 5% dust	Ants and queens killed

IV. NEED FOR THE EXTENSION OF THE SCHEME:

Though the insecticides properties ofDDT and Benzene Hexachloride under South Indian Conditions have been established beyond doubt, yet a good deal of research is necessary to say the last word on the problem. The results obtained can, at best be taken as indicative, since the pests on which the trials were conducted did not appear in a sufficiently severe form as to obtain convincing results. Apart from this the progress themselves was poor owing to the phenomenal failure of the monsoons.

V. Further lines of work be to correctly assess the dosage and quantity of the chemical required for the different pests, the more effectant form of application - whether as a spray or a dust - the residual effect in the field, etc. Apart from these, the insecticides will also be tried against certain other insects such as Amsacta albistriga the red hairy caterpillar, the Deccan grasshopper, Colemania sp. etc.

VI. TECHNICAL PROGRAMME:

2. Confirmation of the results obtained on the items included in the original technical programme (refer para II).
3. ~~Method of application~~
2. Determination of the optimum dosage for different insects.
3. Method of application, whether spray or dust.
4. Comparative merits of DDT and Benzene Hexachloride.
5. Trials on other insects like Colemania on Millets,
6. Amscata albistriga on groundnut, etc.
6. Residual and detterent effects of the insecticides on a field sclae.

VII. A STAFF consisting of an Assistant and fieldman will continue to work under the Guidance of the Government Entomologist. The venue of work will continue to be Coimbatore and Guntur.

VIII. FINANCE: The cost of the extension of the scheme for one year will come to Rs. 4,550 and the contribution to be made by the Indian Council of Agricultural Research will be Rs. 2,275 on a 50: 50 basis; the other half being met by the Madras Government.

Details of the expenditure are given below:

	Rs.
Pay of Staff:	
One Entomology Assistant on Rs.100 in the scale of Rs. 100 -220	1,200
One fieldman on Rs.45 in the scale of Rs.45-2-55-1-60	540
Dearness Allowance of staff: One Entomology Assistant at Rs. 24 per mensem. One Fieldman at Rs. 22 per mensem.	552
NOTE: The provision of house rent allowance at the revised rates of Rs.15 and Rs.6/8/ per mensem to the Assistant and fieldman respectively is under correspondence with the Government of Madras.	
Travelling Allowance: at the rate of Rs. 50 per month.	600
House rent allowance for Assistant at Rs.15	180
House rent allowance of fieldman at Rs.6/8Rs	78

	Rs
Contingencies:	
Wages of one coolie at Rs. 30 per month.	360
Purchase of insecticies.	800
Miscellaneous and other contingencies.	240
Total.	4,550

Summary of expenditure:	
Pay of staff.	1,740
Dearness allowance of staff.	552
Travelling and other compensatory allowances.	858
Contingencies.	1,400Ø
Total. Rs.	4,550.

S. RMACHANDRAN
Government Entomologist, 28th July 1948

/True copy/

S. Jayaraman 16.5.57
Office Assistant,
Madras Record Office, Egmore.

No. 15/7/54